

Safe Drinking Water from Cisterns

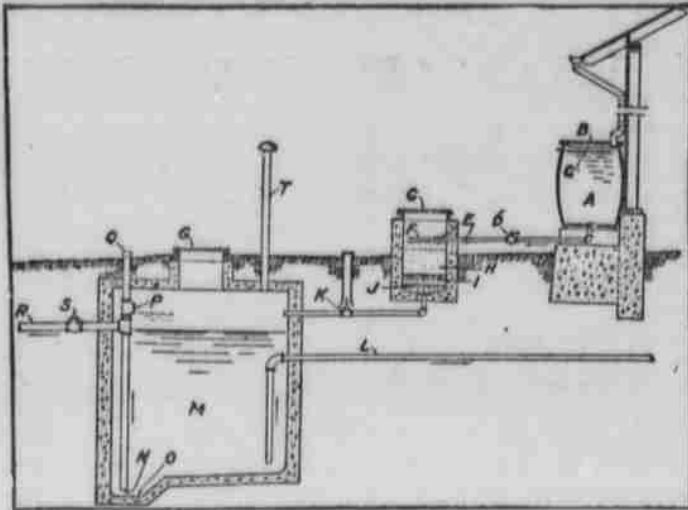
When Well Constructed, Well Operated and Equipped With Filter, They Furnish Valuable Supply for All Household Use

(By United States Department of Agriculture.)

Notwithstanding the serious objections to cistern water for all household use, thoroughly well-constructed, well-operated cisterns are a boon, and their more extensive use is urged.

Vital features of a cistern from which the water supply is obtained are: Absolute water-tightness, top, sides and bottom, and close screening of inlet and waste pipes; provision for excluding from the cistern the first portion of each rainfall until the roof or other collecting area has become rinsed thoroughly; a first-class filter of clean, well-selected sand and thoroughly burned charcoal. The flow in the filter should be downward, and the top area of the filter bed and the rate of flow to the bed must be so harmonized and regulated that slow, effective filtration (not rapid straining) is secured. A waste pipe should be provided which removes surplus inflow from the bottom of the cistern where impurities tend naturally to settle. Periodic and thorough cleaning of the cistern and filter is necessary. From time to time the clogged sand should be raked or removed from the filter and the dirty charcoal replaced.

The practice of throwing charcoal into cisterns to absorb the odors of decaying organic matter is of little advantage. Boiling cistern water, or "dosing" it with chemicals to sterilize it, although safe precautions, injure the



Cistern filter—Cost, \$150. A, hoghead or large tank; B, tight cover; C, wire screen; D, 2 1/2 inch two-way rain cock; E, 3/4 inch union; F, 3/4 inch brass or galvanized pipe, perforated; G, tight overhanging cover; H, 2 1/2 inch layer of fine sand; I, six-inch layer well-burned wood charcoal; J, 2 1/2 inch layer of gravel; K, 3/4 inch two-way rain cock with one branch piped to waste; L, suction pipe; M, cistern, side walls six to ten inches thick; N, one-inch overflow; O, pump or catch basin; P, emergency overflow; Q, screw cap (remove cap and attach hand pump when cleaning cistern); R, waste pipe; S, swing check valve; T, screened ventilator. When starting operation waste the first water filtered; throttle cocks D and K to give the desired low rate of filtration; maintain water level above sand layer, thus protecting the surface film of mud.

wholesomeness of the water and should be regarded as emergency measures—never as suitable substitutes for the best possible construction and operation.

If rain water is filtered effectively, the keeping qualities will be improved and large-sized cisterns may be used. That method of filtration which resembles most nearly the slow percolation of rainfall into the ground will give the greatest degree of purification. Such a filter can be constructed with a barrel or large galvanized iron tank, placed above the ground so it can be easily cared for, and filled with some suitable filtering material. The water as it drains from the roof should pass through this material before it enters the cistern, the rate being kept down to one pint in four minutes (45 gallons in 24 hours) for each square foot of area in the filter bed.

Sand is one of the best and most available filtering materials, and well-burned charcoal is most useful in removing color, taste, and odor. Fine sand removes particles to a greater extent than does coarse sand, but on the other hand it clogs more quickly. Crushed quartz and thoroughly clean pit or beach sand, such as is used in mixing mortar, are employed extensively. The size of the grains should be quite uniform and should be such that all could be sifted through holes made in a sheet of paper by a medium-sized awl or knitting needle. A depth of two feet of carefully selected sand free from clay, loam, and vegetable matter, is preferable to a greater depth of sand of indifferent quality. As the thin surface layer becomes clogged with continued use, it may be scratched or furrowed or a half inch or so may be scraped off with a trowel, until eventually the bed is reduced to 12 or 15 inches in thickness. The sand removed either should be washed and returned, or be replaced with new sand. It is advantageous to place about six inches of well-burned charcoal under the two-foot bed of sand. Triple-burned, triple-ground wood charcoal, the pieces averaging the size of wheat grains, has given excellent results and costs normally about 60 cents a bushel, in sacks, at kilns in eastern states.

1,353,792 Babies Born in 1917

Government Figures Reveal 14,394 Pairs of Twins, 155 Sets of Triplets

Complete statistics for 1917 show 1,353,792 babies were born in the states comprising the birth registration area. The birth rate exceeded the death rate by 74.4 per cent, the United States public health reports show.

Data published in the report shows: Mortality rate among infants under one year 103.9 per cent a thousand, a total of 9,338 per cent of the total born. Total death rate for 1917 (all ages and all causes), 13.7 among white, 22.5 among negroes.

Twins born in 1917, 14,394 pairs. Triplets born same period, 155 trios.

The report says that courts are strictly upholding local ordinances governing health and sanitation.

Included in the report are health hints warning the public against a recurrence of the "flu" epidemics which swept the country last winter, and which may, in many cases, be forestalled by vaccination. The danger of smallpox is also pointed out.

How Sharp Soft Pine Stick May Be Used for Lettering

A storekeeper, who wished to make some large signs with heavy letters, whittled one end of a soft-pine stick down to a sharp, broad edge, and used it to letter the cards. A tool made of this kind of wood works equally well with ink or paint and, in the hands of an amateur, will make a much cleaner letter than a brush. The whittled end resembles the chisel edge on a red-ink lettering brush, so that the ordinary motions are made in using it; but, being more rigid, it demands less skill on the part of the workman.

Variety of Uses for the 3,000,000,000 Bushels of Corncocks Wasted Annually

It is estimated that 3,000,000,000 bushels of corncocks are thrown away every year in the United States, although they can be turned to useful account in a variety of ways.

The cobs may be cooked in a closed tank with water at about 100 degrees above the boiling point. After an hour they are thoroughly softened, and when pressed yield a fluid that is evaporated in an open kettle to a thick sirup. This sirup is an excellent adhesive gum, suitable for use in the paper box industry, in the manufacture of fiber board, for bill posting and for gumming labels. Its employment in place of starch, dextrine and flour paste would make an enormous saving of foodstuffs. The solid material left from the pressing is mainly cellulose, and may be ground coarsely, mixed with molasses and dried for stock feed. Or, by simple chemical treatment, it can be made to yield 75 per cent of its weight in pure glucose. If yeast is added and fermentation allowed, it will produce alcohol. The cob cellulose may also be used in the manufacture of artificial silk and leather, or may be employed as an absorbent of nitro-glycerine in the manufacture of dynamite.

LOVE

If somebody loves you,
You cannot be sad;
You've cause for rejoicing,
You've cause to be glad.
You're a subject for songs
As you journey your way,
If somebody loves you
You ought to be gay.

If somebody loves you,
You're bound to get gay
And throw in the cash
In a wild, reckless way.
If somebody loves you
You'll part from your self
And make quite an all-around
Fool of yourself.

If somebody loves you
You'll write foolish notes
In love-dove language
Upon which she dotes.
She'll save them and use you
And send you by force,
The jury will find for
The plaintiff, of course.

—Exchange.

William Penn, the Founder of Pennsylvania, Died at the Age of Seventy-Four

In 1718, on July 30, William Penn, the Quaker founder of Pennsylvania, died at the age of seventy-four. Penn received the charter for the territory from Charles II in 1680. He was granted almost sovereign powers of government. Immediately upon taking office he pledged to the people freedom to form their own laws and protection and security against oppression. During his long governorship his pledges were amply sustained. He organized a free society of traders and under his wise and beneficent control the prosperity of the colony grew rapidly. Penn's treaties with the Indians secured his settlement from the invasion that so retarded the development of the other colonies and enormously facilitated the increase of its population.

JUST TO SMILE

Knew Him.
Jones—Could you lend me \$10 until tomorrow?
Smith—Not very well. I shall be needing it by week after next.

A Silent Partner.
Mrs. Heck—Does your husband talk politics around the house?
Mrs. Peck—My husband never talks anything around the house.

Easily Pleased.
"I do not know, sir, that I want the love you give me."
"All right, I'll be just as well satisfied if you return it."

"The Editor Regrets."
"A magazine editor must lead a somewhat gloomy life," declared the poet as he opened some returned manuscript.
"Why so?"
"All he seems to do is to pass out regrets."

Her Reply.
"Dear," he cried, resolved to change her. "There are words I burn to say!"
Then she made this cryptic answer.
"All right, Charlie, blaze away."

Selling the Girl.
"So you want my daughter, eh?"
"I do, sir."
"Have you any money?"
"A little. How high do you quote her?"

He Owns Up.
"Where are you going, son?"
"Going to call on a party down the street."
"I don't like the use of that word party. If you are going to see a gentleman, say so."
"Well, dad, I'm going to see a girl."

WASHINGTON CITY SIDELIGHTS



Mexican Bandits Raise Nice Question of Ethics

WASHINGTON.—President Wilson's cabinet split wide open on the following question: Was Captain Matlack justified in beating the Mexican bandits out of \$5,500 of the ransom for the two army aviators? With the professors of ethics who supervised military morals during the war demobilized, there have been no authorities to turn to for a ruling, and it looks as if President Wilson, who instructed the senate committee on the difference between a moral and a legal obligation, would be called upon to decide this moral issue for the cabinet.

One group of cabinet members condemns the cheating of the bandits as dishonorable, declaring it reprehensible to break a promise made even to a criminal. Another group contends that the breaking of a promise made under duress is justifiable.

Then there is a utilitarian school of thought maintaining that the bargain ought to have been carried out implicitly because the impairment of our reputation with the bandits for good faith may embarrass future negotiations to ransom our citizens.

The Mexican border's contribution to the controversy was that General Dickman was seeking ways and means to pay the remainder of the ransom to the bandits.

The sportsman, who has a nice sense of honor in disputed questions of this kind, will unhesitatingly say that General Dickman is right.

The average American will probably say: "Pay the bandits the money and then shoot 'em."

Yankee Saleswomen to Sell Goods to Harem Women

THE American women's chamber of commerce, the first organization of its kind having national and international scope, is trying to do these things: Prevent compulsory physical examination of American school teachers by man surgeons; extend through the Southwest and middle West a truck delivery of fresh vegetables, eggs, milk and other farm products, with girl drivers in charge of the trucks; popularize American lingerie and toilet articles among the sultan's daughters, and popularize American shoes among the women of China.

Mrs. Katherine Clemons Gould, a founder and past president of the organization, who recently returned from a business trip to China, tells all about it. First attention is to be paid to the Smith-Towner senate bill for physical examination of women teachers. The chamber will insist that the examiners be women. And, while they are on the subject of teachers, the women of the chamber of commerce will fight to obtain for them a higher rate of pay.

"We first had to educate the women of China," said Mrs. Gould, "who formerly believed that it was sinful to permit their feet to develop naturally. In many Chinese cities we have persuaded merchants to handle American-made shoes for women, and as the Chinese women gradually adopt the western custom a great field for the American shoe industry will be opened."

Saleswomen have been sent to Turkey with a line of toilet articles and apparel and have had tremendous success. Mere men, she explained, cannot even approach the feminine Turkish customer.



Navy Aviators Fight Unifying of Air Service

NAVY aviators are against the proposal to concentrate the air service of the army, navy, postoffice and coast and forest fire patrols under a single executive, probably a new cabinet member. Differing kinds of service, with special qualifications for each, make it necessary to keep the branches separate, they believe.

Capt. G. W. Steele, Jr., of the U. S. S. Shawmut shows the attitude of the navy flyers in the form of some manuscript prepared by him as commander of the work of the air fleet of the Atlantic squadron, department of navy aeronautics.

Captain Steele and the Shawmut are now at Newport, R. I. Previous to its assignment there the boat was a mine sweeper on the Irish sea, but returned to American waters in time to handle the testing of the navy airships prior to their transatlantic flights, and later in Lisbon, where they landed.

"There are reports," says Captain Steele, "that the proposed congressional legislation to consolidate the air services will provide for a separate cabinet officer as head of the department of aviation, and others that say the head of the aviation department will merely be a chief, such as the various bureaus of the army and navy have."

"Either of these plans, or any other plans which take aviation for the navy out of complete control of the navy department will mean the service will suffer, and such legislation should be opposed."

"A navy flyer has to know how to navigate, either from the flimsy cockpit of an albatross or from the bridge of a vessel. He has to know how to do navy scouting, bombing and torpedoing, coast patrol work, and finally the spotting of shots and regulation of navy fire."

Captain Steele's conclusion is that the army aviator cannot know the difficulties of the navy flying game and it takes him years to learn his own.

Uncle Sam Wants a Purchaser for a Model Town

IF ANY one is in the market to buy a town the war department has one for sale. In advertising this fact to the public the government said in an official announcement, among other things: "The war department is offering for sale the town of Nitro, W. Va., a complete industrial community embracing 737 manufacturing buildings, housing accommodations for 20,000 persons, and the utilities and civic improvements that constitute the conveniences of a modern city."

"Nitro, built by the government at a cost of approximately \$70,000,000, is the site of the second largest smokeless powder plant in the world. The bids must cover not only the powder plant and the other industrial units which were erected to prepare the ingredients essential to powder making, but the civic community as well."

"The industrial community of Nitro stretches for more than four miles along the east bank of the Kanawha river. Here are to be found a sulphuric acid plant in seven units, the capacity of which is 700 tons per day of 24 hours; a nitric acid plant of four units, the capacity of which is 300 tons per day; a cotton purification plant of standard pulp mill design in four units, the capacity of which is 225 tons per day; a nitrating, colloidizing, and drying plant; 18 shipping houses, or magazines, segregated for the storage of powder; etc.

"Set upon the foothills, overlooking the industrial area with its bristling smokestacks, stands the civic community—more than 1,500 furnished portable houses, homes for the workmen who will make the manufacturing units producing institutions; 75 permanently constructed executive residences, hotels, boarding houses, dormitories, clubhouse, general and special stores, cafeterias, and moving picture houses, etc., etc., etc."

"Step up, ladies and gentlemen. How much are we offered?"



GOOD ROADS

KEEP ROADS IN GOOD REPAIR

Concrete or Special Road Brick Set in Cement Over Concrete Foundation is Favored.

The war and the consequent railroad congestion imposed heavy traffic burdens upon our highways; burdens, in fact, much greater than the roads were built to sustain. To make matters still worse, labor and repair materials were scarce during the war, and many roads as a result are now in deplorable condition. As the preacher would say, they are "more holy than righteous."

The year 1919 is going to witness an immense road repair movement. And the work should be at least fairly permanent. Merely throwing dirt or



Experiment Road of Vitrified Brick for Paving Country Roads at Chevy Chase, Md.—Finished Pavement in Service.

loose stones in the holes is a sheer waste of time, because after a few automobiles and trucks go over the roads these loose materials are pushed out again and conditions are as bad as ever.

Broken stones and tar binder are the only satisfactory repair materials for macadam roads, and many improved country roads are of that type.

It is beginning to be realized that concrete or special road brick set in cement over a concrete foundation must be used for truck roads designed to carry heavy truck traffic. Anything cheaper and less stable simply means bad roads and constant repairs.

For laterals or main roads in sparsely settled countries where traffic is not heavy and when the amount available for road construction is not large, tar macadam highways are quite satisfactory.

PLAN HONOR TO ROOSEVELT

Suggestions Have Been Made to Name Transcontinental Highway After Former President.

Memorials to the dead and tributes to the living in the form of highways is a plan which is catching the popular fancy everywhere. Since France christened a street in honor of Wilson, Tientsin, China, has done the same thing, and elsewhere suggestions have been made that a transcontinental highway be named in honor of Roosevelt. Louisiana is planning a Victory oak way and sentiment is reflected by movements to rename streets and highways after heroes of the war in other states.

DURABLE ROAD SAVES MONEY

Saving of Eight Cents Per Ton Mile Can Be Effected in Transportation Costs Alone.

The report of the joint congressional committee which investigated highway economies in 1914 shows that a saving of eight cents per ton mile can be effected in transportation costs when a road is lifted from the dirt to the durable class. This does not take into account increased real estate valuations or social advantages resulting from the improvement.

IMPROVE ROADS FOR TRUCKS

Bureau of Markets Arrives at Conclusion Motor Vehicles Have Passed Experimental Stage.

Inadequate highways are one of the penalties with which the user of highway transportation must contend, says Bulletin No. 770, recently issued by the bureau of markets. The department arrives at the conclusion that the motortruck has passed the experimental stage, but says that before it can attain its fullest usefulness the highways must be improved.

Good Drainage Necessary. The most necessary requirement of a good road is a solid, bone-dry foundation. This means good drainage first, last and all the time.

Trees Along Highways. Trees at a distance of 50 or 60 feet apart along the highway add to its comfort and pleasing appearance.

Makes Hauling Easy. Easy to town, and easy to ride, Make a farmer's hauling and loads fairly glide.